Improving Care Delivery and Communication during Hospital Rounds using Quality Improvement Methodology: A Multidisciplinary Team Approach

DNP Final Project

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Nursing Practice in the Graduate School of The Ohio State University

By

Joshua E. Gossett, DNP-c, MBA, RN, FACHE

The Ohio State University

2015

DNP Project Committee:
Joyce Zurmehly, PhD, DNP, RN, NEA-BC
Mary Alice Momeyer DNP, ANP-BC, GNP-BC
Barbara Warren PhD, RN, PMHCNS-BC, FNAP, FAAN

Acknowledgements

First and foremost, thank you to my committee, Drs. Zurmehly, Barker, Warren and Momeyer, for their dedication and patience with me during my doctoral journey. I couldn't have done it without your guidance.

Thank you to my wife, Jamie, for all the support that you have shown me during this time. You have been my constant encouragement.

Additionally, I would like to give special thanks to David Galloway, Susan Miller, Joan Higby, Lisa Cope, Elizabeth LaTulippe, Wendy Ungard, and Shehzad Saeed for all of your dedication to this project. The work you did on collecting data, building charts, developing and implementing the interventions and changing culture are what made this project a success.

Abstract

Effective communication and collaboration with patients and their families is essential to the care of the patient. An ideal opportunity for this to be accomplished is during multidisciplinary, family-centered rounds. Current rounding practices are not effective in consistently meeting the needs of the patients' families. A feedback tool of 7 questions was developed that provided feedback on communication and care delivery in the rounding process. The percentage of these questions that were answered "Always" was used as the outcome measure for improvement. Five different PDSA ramps were tested during the project timeline. Changes in the outcome measure were evaluated continuously during the testing to evaluate the success of the interventions. The median percentage of the family survey questions that are answered "Always" increased from 78.6% to 85.7% by the end of the project. All five interventions were adopted into practice and incorporated into the service's rounding guidelines. The implementation of specific rounding practices, ultimately leading to a more consistent rounding process, has improved Parent/Guardian perceptions of delivery of care delivery and communication with the healthcare team during family-centered rounds.

Keywords: hospital rounds, rounding, family centered rounds, communication, care delivery

Table of Contents

Chapter One: Nature of the Project

Introduction

Family-Centered Rounds (FCR) has been defined as "multidisciplinary work rounds at the bedside in which the patient and family share the control of the management plan as well as in the evaluation of the process itself (Sisterhen, Blaszak, Woods, & Smith, 2007). FCR are operationalized as a multidisciplinary team of healthcare professionals actively moving from one patient to another, pausing to review key components of the patient's care with the patient and/or their family and address any comments or concerns that they have. A multidisciplinary team of healthcare professionals can include members from different disciplines among which might include medicine (doctors), nursing (staff nurses or other nursing roles), case managers, pharmacists, respiratory therapists, nutritionists/dietitians, and sometimes physical or occupational therapy or chaplaincy when appropriate.

Since patient-centered care was highlighted in *Crossing the Quality Chasm* in 2001 (Institute of Medicine (US) Committee on Quality of Health Care in America, 2001), there have been studies on the importance of including patients and families in the rounding process (Muething, Kotagal, Schoettker, Gonzalez del Rey, & DeWitt, 2007). The concept of family involvement at the bedside has become more regular and consistent, and institutions view the inclusion of patients and families as members of the healthcare team as a driver for their satisfaction with healthcare delivery. Problems in the communication between members of the care team were identified that consistently impacted the patient and their family within this pediatric healthcare organization. Utilization of a Family-Centered Rounding approach was considered as a solution.

This project began following inquiries by members of the rounding team for the primary service to understand how patients' families perceived verbal discussion during rounds as beneficial. Guidelines outlining the rounding service process currently existed (Appendix A); however these guidelines were not being consistently implemented. The gaps in the guideline performance were specifically around involvement of the bedside nurse in rounds and clearly stating the plan for the day. The rounding team, to further assess compliance with current guidelines and current best practice, formed a stakeholder group to

further assess for best practice gaps. The stakeholder team invited feedback from family members during rounds.

Feedback regarding the rounding process was collected from 7 patient's families in the form of a focus group. The following themes emerged from those discussions:

- The plan was not always clear to the family
- Families are intimidated by large group of healthcare professionals
- Members are not consistently introduced to the family during rounds
- The families sometimes feel too rushed to ask questions
- Families would like to talk more 1:1 with attending for more information than is covered on rounds
- There is discordance between inpatient team and initial plan set out by the primary outpatient GI team
- Families would like to be informed of rounding times
- Families appreciate when discharge goals are shared during rounds

Therefore, the findings of the informal poll revealed that patients' families were experiencing gaps in communication with the rounding team, which were not consistent with the procedural guidelines in place. The rounding process lacked efficiencies and effectiveness, and did not meet the needs or expectations of patients' families in key areas.

As a result this quality improvement project was initiated using a multidisciplinary team approach to improve the rounding process in relation to family centered care. The project team consisted of regular participants in the rounding process and was thoughtfully chosen to represent the major disciplines with interactive responsibilities with the families, as well as consistent responsibilities among the rounding team. This was done in order to ensure that key disciplines were well represented, and that there would be invested individuals from each discipline to assist with obtaining buy-in from members of the rounding process that were not on the improvement team. The members consisted of the medical director, nursing

director, second-year gastrointestinal fellow, pediatric nurse practitioner, nurse specializing in bedside care, case manager, nurse manager, and quality outcomes manager.

Purpose

The purpose of this project was to integrate concepts of effective family-centered communication based on the literature including best practice into the rounding process using quality improvement methods in a multidisciplinary team approach in order to improve the communication between the healthcare team and patients' families.

The PICOT question that emerged was the following: For the parents or guardians of pediatric patients admitted to the rounding service, does the implementation of evidence based rounding practices improve the communication to the patients' families, when compared to the current rounding practices, during their inpatient stay?

Significance of this Project to Nursing as well as Relevance to the DNP Essentials

Effective rounding is essential to the delivery of care to patients that are in the hospital setting. It is during rounds that the team discusses the last 24 hours of the patient's treatment, reviews the plan for the following 24 hours, reviews goals related to discharge of the patient from the hospital, and relays this information to the patient and their family. It is also one of the major face to face interactions between the patient/patient's family and the healthcare providers involved in their care. It allows the patient and their family an opportunity to ask questions and provide critical information that will assist in their course of treatment.

Scientific Underpinnings for Practice. This project provided an opportunity for the participants to learn and use the science-based theories associated with the quality improvement theoretical model to evaluate the outcomes associated with healthcare delivery to patient's families in the pediatric, acute care setting. The team was then able to pull in knowledge from analytical and organizational sciences and integrate them into the nursing and medical care practices to foster change in these practices. The

concepts and outcome measures remained tied to the available science and literature associated with the topic.

Organizational and Systems Leadership for Quality Improvement and Systems Thinking & Interprofessional Collaboration for Improving Patient and Population Health Outcomes. In addition to leveraging the sciences for the evaluation of the outcome measure, the team was also responsible for significantly altering the current practices of many healthcare practitioners. This was a difficult undertaking and has required advanced communication skills and sensitivity to the diversity of practice patterns and preferences. However, the accountability on the healthcare team for achieving improvement in the delivery of care to the patient's and families was shared among all involved. Ultimately, it was everyone's responsibility to implement the practices that would meet the current and future needs of our patient population and their families.

Clinical Scholarship and Analytical Methods for Evidence-Based Practice & Advanced Nursing Practice. A critical evaluation of the current literature was conducted for the purposes of understanding what the best practices were for optimizing the quality of care delivery during rounds. The results of this review were then used to guide the design and implementation of the concepts for this project, and further develop the practice guidelines for this process. Technology was leveraged to assist in the collection and management of our anonymous feedback data and statistical analysis was applied to the results to formulate an understanding of the change that the process underwent.

In summary, the existing body of knowledge was leveraged in this project to define key change concepts that could be implemented into the rounding practice. Those changes were integrated through collaboration with the healthcare team using quality improvement methodology. The improvement work was then driven by the data that was collected which was a representation of the needs of the patient's families. After the concepts were implemented, the data was analyzed and determined to represent significant change in the outcome of the practice.

Chapter Two: Review of Literature

Theoretical Framework

This project was designed to improve communication by increasing effective communications during rounding with family members in a pediatric unit. The framework for the practice changes in this project is based upon the "Model for Improvement" (Langley, Nolan, Nolan, Norman, & Provost, 1996). While the model is nearly two decades old, it is a classic methodology for process improvement. This model was selected because it is easy to learn and use, and has been found to be effective in projects that range from very complex to simple (Langley et al., 1996). The model consists of four steps to accomplishing improvement:

- Have a clear aim or goal by asking "what are we trying to accomplish?"
- Have a measurable outcome by asking "How will we know that a change is an improvement?"
- Have ideas for how to improve by asking "What changes can we make that will result in an improvement?"
- Test those ideas. (Langley et al., 1996)

The "testing" of these ideas is accomplished through detail-oriented, rapid cycles of intervention and debriefing that are designed to allow for fast learning and adjustment of interventions if needed to achieve the outcome. Commonly this process is known as a "Plan-Do-Study-Act" cycle (PDSA) (Langley et al., 1996). In a PDSA cycle, the improvement team is expected to plan how the intervention will be implemented which includes assigning roles and tasks when necessary. The intervention is then implemented. The effects of the intervention are then studied in relationship to the measureable outcome. Based on this information, action is taken to adopt the intervention permanently, adapt the intervention to improve it based on feedback, or to abandon it if it lacks effect on the outcome measure (Langley et al., 1996).

The PDSA cycle (sometimes called a Deming Cycle) was championed by Dr. W.E. Deming in his "System of Profound Knowledge" work that focused on looking at an organization as a system acknowledging that the outcomes produced by that system are influenced by many variables. The understanding of this natural variation is a key component to the analysis of the data that was collected and judgment of it being effective or not in improving the outcome (The W. Edwards Deming Institute, 2014). This model fits this improvement project well because it allows for rapid learning and adjustment of processes, which build efficiencies into the complex rounding workflow. In addition, it allows for acceptance of natural variation and serves as a guide to understanding when real improvement is accomplished. This is important so that only interventions with significant impact to the system are adopted into practice in a timely manner.

Related Research

A review of the literature was conducted using the PubMed/Medline, CINAHL and Cochrane databases. The search terms that were used were "pediatrics, patient-centered care, infant/newborn, family, child, teaching rounds, professional-family relations, patient rounds and family-centered rounds". Articles were selected for review based on currency (articles from 2004 through July 2014 were considered in order to capture the largest portion of relevant studies), English language, peer reviewed articles, and were then screened for relevancy to the topic. This review of the literature keyed to hospital rounding resulted in findings summarized into three major categories: rounding best practices, multidisciplinary rounds, and family-centered rounds. There are overlapping concepts between these categories (such as 'rounding best practices' including 'multidisciplinary team composition'). Articles that highlight concerns regarding the inclusion of patients and families in the rounding process are also discussed to give a complete picture of the body of knowledge available on this topic.

A systematic review of rounding practices in the ICU environment was conducted by Lane et al in 2013 (Lane, Ferri, Lemaire, McLaughlin, & Stelfox, 2013) with the following PICO question in mind: "what are the facilitators and barriers to rounding in the ICU to provide recommendations for evidence

based practices in patient care rounding?" (Lane, Ferri, Lemaire, McLaughlin, & Stelfox, 2013) In this study, a search of Medline, Embase, CINAHL, PubMed, and the Cochrane library through September 21, 2012 was conducted. 43 articles were selected for review; 13 were ethnographic studies and 15 uncontrolled before-after studies, six used control groups, one time series, three cohort studies, and one controlled before-after. 13 facilitators and 9 barriers to patient care rounds were identified.

The effect of rounding with a multidisciplinary team on patient outcomes has been studied. In 2009, Johnson et al sought to compare the rate of ventilator associated pneumonia (VAP) in trauma patients before and after the implementation of multidisciplinary rounds in an open intensive care unit. The team found that the rate of VAP was found to decrease from 34.4 events per thousand ventilator days to 23.4 events per thousand ventilator days after the implementation of multidisciplinary rounds. This signified a significant ($p=0.04$) reduction in the incidence of VAP in this population. They also incidentally found that there were decreases in the rates of catheter-related bloodstream infections, catheter-related urinary tract infections, and hospital acquired pressure ulcers. A possible cause cited for this are that the structure of the new FCR improved the adherence of various ICU protocols as well as the development of new protocols (Johnson et al., 2009).

O'Leary et al (2011) had similar success with the implementation of structured multidisciplinary rounds and the reduction of hospital related adverse events. In their study, a retrospective medical record review was conducted on randomly selected patients from two similar medical teaching units in the 24 weeks prior to implementation, and 24 weeks after implementation, totaling 555 records. Rates of adverse events were compiled and compared using Poisson regression. The rate of adverse events was 3.9 per 100 patient-days for the group who received structured multidisciplinary rounds, compared to 7.2 and 7.7 per 100 patient-days for the concurrent and historic control groups ($p=0.005$ and 0.001, respectively) (O'Leary et al., 2011).

In addition, Licata et al (2013) attempted to improve patient safety by improving communication among rounding participants. The study interventions were facilitation of consistent and structured participation in rounds by staff nurses, promoting staff nurse communication as unique contributions to

the care of patients, elevating the staff nurses role to a leader, and ensuring shared decision making among patients, families and providers. Education sessions were offered to nurses and physicians, and a paper reference tool was created to guide presentation. Data was collected as observations of the rounding process by a rounding team member. After implementation, staff nurse participation in rounds was observed to have increased by 19%, reports of important overnight events increased by 57%, and the identification of discrepancies in physician orders by nurses increased by 26% (Licata et al., 2013).

As a compliment to the studies on multidisciplinary rounds that focused on improvement of outcomes, Cardarelli et al (2009) identified multidisciplinary rounds as a cost effective intervention. Median rounding time per patient for their study was 15 minutes. Median number of rounding participants was 13.5. Mean cost in salaries per patient in rounding was $140.87. Their conclusion was that multidisciplinary rounds are a low-cost medical intervention with proven benefits (Cardarelli, Vaidya, Conway, Jarin, & Xiao, 2009).

Studies that were identified as specifically focusing on patient/parent involvement in the rounding process were mainly concerned with the satisfaction of the patient/families, staff, or both. In 2012, a systemic review of the literature was conducted by Cypress with the following PICO question in mind: "In critical and noncritical pediatric and adult patients, does family presence on rounds vs non-inclusion of family members affect patient, family, and health care staff outcomes?" (Cypress, 2012) In this study, a search of MEDLINE, CINAHL, OVID, PsychInfo, and Cochrane electronic databases and Central Register from 1988 to 2010 was conducted. 19 reports were selected for review. They included 2 RCTs, 1 quasi-experimental design, 12 observational studies, 1 qualitative descriptive, 1 mixed-methods research, 2 QI reports, and 4 anecdotal notes. In summary, Cypress concluded that family presence during rounds was found to lead to positive outcomes and increased satisfaction in patients, families and health care staff (Cypress, 2012).

Despite this significant body of knowledge that supports the benefits of including patients and families in the rounding process, there have been some studies that have raised concerns regarding patient/family negatively impacting the length of rounding time and the ability to teach on rounds. In

2012, a study by Rappaport et al sought to understand the impact of family-centered rounds on 1) length of rounding time, 2) satisfaction of families and, 3) satisfaction of rounding participants. The duration of rounds per patient was actually found to be reduced when families were present (8.7 minutes vs 12.7 minutes). Families reported increased satisfaction and increased knowledge of team member's roles. Attending physicians reported that rounds were easy to manage more often if families were present. However, senior residents perceived decrease autonomy when families were present. Overall, their conclusion was that family participation in rounds may reduce the length of rounds and result in satisfaction in families and staff, though senior resident autonomy needs to be considered (Rappaport, Ketterer, Nilforoshan, & Sharif, 2012).

The conclusion that an increase in overall rounding time is not associated with the presence of patients and families in rounds was echoed in a time-motion study by Bhansali et al in 2013. Their results were that parents participated in 81% of encounters, average time for each patient encounter was 7.9 minutes, interruptions were observed 574 times during the 159 patient encounters, and only the teaching of physical examination was associated with increased rounding times. They concluded that minimizing door to door time, streamlining patient presentations, and decreasing interruptions may improve rounding efficiency (Bhansali et al., 2013).

The concerns over hospital rounds for junior medical staff with the inclusion of patients and families were also corroborated in other studies. In 2011, Cox et al studied the medical students' concerns, teaching evaluations, and attitudes after experiencing FCRs during their pediatric clerkship. They found that 34.5% of students were concerned with presenting information in a way that was understandable to patients and families (Cox et al., 2011). Also, in 2009, Cameron et al studied perceptions of pediatric patient's parents and healthcare providers. While 81% of the parents reported that participation in rounds increased their overall satisfaction with their child's care, 32% of the rounding events captured had at least 1 healthcare provider that believed that parental presence limited the discussion. They concluded that "parental presence on rounds limits discussion of potentially sensitive topics and likely has a negative impact on house staff education" (Cameron, Schleien, & Morris, 2009).

As evidenced by an editorial response to Cameron et al's publication by Simmons and Brinkman in which they voiced various concerns regarding their methods and possible bias of the investigators (Simmons & Brinkman, 2009), there is a fair amount of dissent among healthcare providers on where the risk-benefit balance of including patients and families in the rounding process lies. Further investigation into these risks and benefits is needed to completely understand how to safely include patients and families in these bedside discussions.

Evidence Synthesis

In summary, three major categories of study related to hospital rounding emerged from the literature review; rounding best practices, multidisciplinary rounds, and family-centered rounds. These categories were overlapping and complimentary at times, and there was a sufficient body of study within each category to capture a meaningful understanding of the facilitating aspects, barriers, and effects of each aspect studied. Best practices were identified for hospital rounds such as discussion and documentation of goals, standard rounds structure and process, open collaborative discussion environment, visibility of healthcare providers and checklist use (Lane et al., 2013). Outcomes were shown to improve with the implementation of a multidisciplinary team approach and satisfaction of patients and families increase when they were included in the discussions of the rounding team.

Chapter Three: Methods

The site chosen for this project is a large, metropolitan pediatric tertiary care center in Cincinnati, Ohio. It is a non-profit, academic medical center and consists of nearly 600 beds, had more than 1.1 million patient encounters, and serves patients from all 50 states and 53 countries. It trains over 600 new residents or fellows in various pediatric specialties each year, and was able to secure over $200 million in sponsored research grants in fiscal year 2014 (Cincinnati Children's Hospital Medical Center, 2015). The target unit for this project is a mixed medical/surgical pediatric care unit with 24 private hospital rooms and serves primarily patients with medical gastrointestinal disorders and patients that will or have undergone some type of colorectal surgery. The budgeted average daily census of this unit is 18, but has been higher than this over fiscal year 2015.

Approval was sought and granted from the medical and nursing leadership to begin a quality improvement project with a focus on improving the perceptions of pediatric patients' and/or guardians on the care delivered and communication of the healthcare team during the rounding process. An application was made to the Institutional Review Board (IRB) to examine any concerns for the human subjects involved and the project was found to not apply as human-subjects research under their definition (Appendix B). In addition this project was determined by the office of research at The Ohio State University to be a quality improvement project.

Project Design

The Plan-Do-Study-Act Framework also termed Rapid Cycle Improvement was used to form this project plan. This is an interactive four-stage cycle that is used for process improvements. Based on best practice, the concepts were evaluated and compared to the outcome measure data that was being collected concurrently. Process improvements were then adopted into the current rounding procedure guidelines for the hospital service. A total of five unique concepts were extracted from the literature and implemented using the PDSA model throughout the duration of this project. These concepts were: verbalization of patient goals, targeted questioning, use of a standard template, incorporation of visual reference tools for

team collaboration, and purposeful inclusion of bedside nursing into rounds. Each concept was implemented for either one day, or one round, and eventually was increased to all rounds, every weekday. The effect of the feedback responses has been individually noted on the run chart for the overall outcome measure (Chart 1).

Methods

The first concept that was assessed was the review of discharge goals verbally during the rounds with the family. At baseline, the goals for discharge were not explicitly mentioned in the interaction with the family. It was found that sometimes the team members were able to surmise the discharge goals from the discussion. The final concept that was permanently adopted into the rounding guidelines consisted of the presenter using the trigger phrase "Discharge goals are…" during walking rounds (not pre-rounds), and would have the charge RN champion the process by reminding the presenter if it was forgotten.

The next concept implemented was a closing statement that was used to draw out the families more in expressing their questions or concerns through the use of targeted questioning. At baseline, the rounding team would always inquire whether the patient or family had any questions at the end of the discussion in the format of "Any questions?" However, the literature indicates family members can become overwhelmed with information during rounds, and they might not be able to articulate their questions given such a broad opportunity. The final concept that was permanently adopted into the rounding guidelines consisted of asking the family member a more directed question such as "Do you have any questions about X", whereas "X" represents a specific topic such as the plan for the day or discharge goals that the presenter wanted to make sure the patient and family understood.

The subsequent concept was the use of a standard note template for the electronic medical record that was developed for use in the resident or nurse practitioner's daily progress note. This template was designed to include discharge goals in the note, so that it would assist the presenter more with their presentation of discharge goals on rounds. Since the note was used by the presenter during their presentation, changing the format in this was would serve as a checklist of sorts, to make sure that the discharge goals were discussed during the presentation. The final version of the template that was

permanently adopted into the rounding guidelines included a generic discharge goals section, as well as diagnosis specific discharge goal sections.

The next concept was utilization of a visual reference tool to solidify the plan for the day for the families in the patient's room. During the course of this project, new pre-printed white boards were installed by the hospital into every patient room to be used as a tool to help communication between healthcare providers and patients. These new tools were incorporated into the project to serve as a receptacle for the plan of the day for the patient. The final concept that was permanently adopted into the rounding guidelines consisted of the resident or nurse practitioner who was not presenting that patient would enter the room and write the plan on the board as the presenter verbalized it.

The last concept was purposeful inclusion of the bedside nurses into the rounding process. Bedside nurses present at rounds and contributing to the discussion have been shown in the literature to improve communication among healthcare providers and reduce mistakes. It was important for the project to assess and improve this component of rounds if possible. During a baseline assessment, the nurses were indicated as present for rounds on an average of 60.3% of the time, and were just asked "Any concerns?" The top three barriers identified by the nurses as to lack of attendance were "Too busy", "Not given the opportunity to speak", and "Do not know when the team will arrive." The final concept that was permanently adopted into the rounding guidelines consisted of the charge nurse notifying the bedside nurse a few minutes before arriving that the team was rounding on their patient next. The nurse would then come to the bedside and was asked to give a "1 liner" about the reason the patient was in the hospital and how they had done over the last 24 hours. The nursing leadership helped in communicating the importance of their participation in rounds and that it should be prioritized as an expectation in their role as nurses.

Sample

The group of family participants consisted of patients' parents/guardians that were present on rounds that day, able to read and speak English, and verbally consented to participate. The feedback tool was given to patients' parent/guardians throughout the duration of the project on days that were non-

holiday, weekdays. The total sample of feedback sets completed in the timeframe of this project (from 10/31/14 to 1/23/15) was 223 over 47 different days. The number of feedback sets collected in one day ranged from 1-8 and averaged 5 with a median of 5.

Instrument

The feedback questions were transferred into an electronic format and administered on an electronic device in an anonymous manner. A list of patients' parent/guardians who were present for rounds was delivered to a member of the team who was not in the rounding group that day. This person then approached all patients' parent/guardians who were still available at the conclusion of rounds, explained the feedback questions, and requested their verbal consent to participate. If more than one eligible person was present after rounds and willing to participate, then the family self-selected a single participant. Upon consenting, the participant was then given a tablet computer and was asked to complete the feedback questions at that time. The team member stepped away from the participant to allow for privacy, and waited for the feedback to be completed.

The feedback form was constructed to determine what the perceptions of pediatric patients' parents/guardians were on care delivery and communication of the healthcare team on rounds during the implementation of the concepts. A set of seven questions was created under the guidance of the satisfaction survey questions that are currently being used to gauge patient/family satisfaction with their hospital stay, as well as key components from the rounding process guidelines. Input from a patient parent volunteer that was engaged to help guide our improvement strategy was also sought and obtained. They helped to isolate the important topics of care delivery and communication during rounds from a parent's perspective. Once the feedback form was finalized, the questions were validated with the patient parent volunteer as being representative of the important aspects of rounds from a parent perspective.

The questions were designed in a 4-point, word-anchored Likert-style ranging from "never" to "always". They included aspects of effectiveness in the communication amongst the GI team, clarity of communication to the parent/guardian, review of the plan for the day, review of the discharge goals, and

inclusion of the parent/guardian in the discussion. The feedback form was given in a daily format in order to try and understand the effect of the process changes on the overall feedback results, as well as the effect on the individual question responses. For reference, a copy of the feedback questions can be found in Appendix C.

The feedback results were quantified by counts or frequency of responses in the following categories:

1. Question responses with a result of "always"
2. Question responses with a result other than "always"

Proportions from these counts of "always" and "not always" responses were calculated and represented as the percentage of "always" responses. These calculated values were inserted into a heat table from which additional descriptive charts were created. A heat table is a visual identification tool that allows for quick identification of where a result lands in the range between the top and bottom results via coloration of the cell the value is in.

The outcome measure for the project was measured as "% of "always" responses each day for all questions." Additional measures were created as "% of "always" responses each day" for each individual question. This proportional (% always) analysis is common for patient/family experience metrics at the project institution. It also provided a starting platform for the improvement work when compared to numeric assignment of the ordinal data and an averaging or other calculation of these values.

Data Analysis

The baseline data for the feedback collected had the following traits. Eleven days were included in the baseline data. The number of patients' feedback obtained each day ranged from 1 to 7 with an average of 4 and median of 5. Total feedback sets given were 49, total questions answered were 343.

a) The question with the lowest proportion of "Always" answered in the baseline data per day was *"How often did your child's GI care team review goals for discharge?"* (Average of 50%, median of 50%)

b) The question with the highest proportion of "Always" answered in the baseline data per day was *"How often did the GI care team explain things to you in a way that was easy for you and your child to understand?"* (Average of 82%, median of 83%)

The overall proportion of questions answered "Always" was 72% with a median of 79%. See table 1 for additional data on these measures.

% "Always"	n	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Total
10/31/2014	7	100%	100%	86%	100%	100%	57%	86%	90%
11/3/2014	6	83%	50%	33%	50%	67%	17%	50%	50%
11/4/2014	2	100%	50%	100%	100%	50%	50%	100%	79%
11/5/2014	5	80%	80%	60%	80%	80%	40%	80%	71%
11/6/2014	2	100%	100%	100%	50%	100%	50%	50%	79%
11/7/2014	6	83%	83%	83%	83%	83%	67%	83%	81%
11/10/2014	1	100%	100%	100%	100%	100%	100%	100%	100%
11/11/2014	6	83%	100%	67%	100%	67%	33%	100%	79%
11/12/2014	5	60%	80%	80%	80%	80%	60%	80%	74%
11/13/2014	2	50%	0%	50%	50%	0%	0%	0%	21%
11/14/2014	7	57%	71%	71%	86%	57%	71%	71%	69%

Table 1

Chapter Four: Findings

Results

The post-implementation data for the experience of families had the following traits. Thirty six days were included in the post-implementation data. The number of patients who completed feedback each day ranged from 2 - 8 with an average of 5 and median of 5. Total feedback sets given were 174, total questions answered were 1218.

The questions showing the greatest improvement were the following:

(Average % rating "Always", Difference from baseline)

Question 6 - "How often did your child's GI care team review goals for discharge?" – (76.6%, 27%)

Question 2 - "How often did the GI care team involve you as much as you wanted in discussions about your child's health care?" – (90.3%, 16.2%)

Question 1 - "How often did the GI care team explain things to you in a way that was easy for you and your child to understand?" – (86%, 4.4%)

The overall proportion of questions answered "Always" increased from a median of 78.6% to 85.7%. The mean increased from 72.6% to 80.7% (p=0.002). See chart 1 for additional data on these measures.

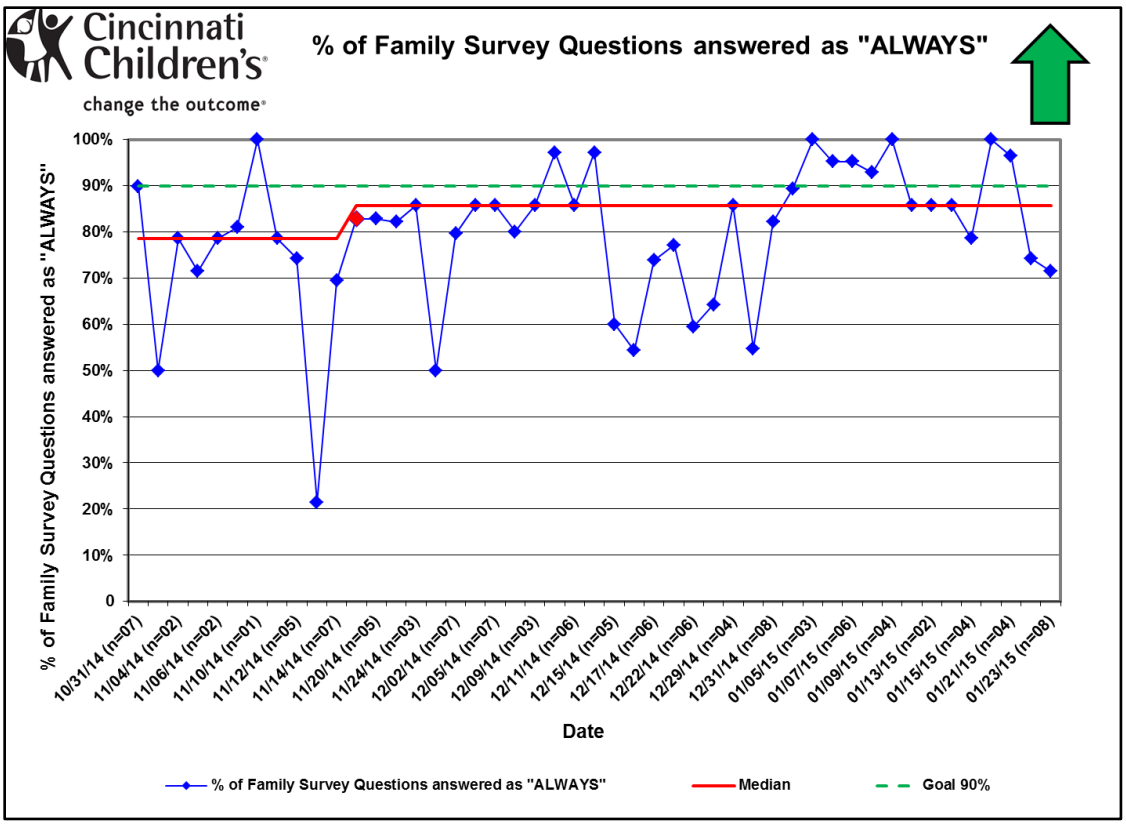


Chart 1

In addition to the grouping of these data by pre- and post-implementation groups, the data were also analyzed in regards to statistical shifts in the system on a timeline. Taking a look at the feedback data in this way is useful in determining the impact that an individual concept had on the measure. The same data set is used but we shifted the median line each time there was a consecutive run of 8 points above or below the previously set median (a standard in the institution). Notations were then overlaid on top of the implementation dates to demonstrate what was happening to the system from the introduction of our concepts over time.

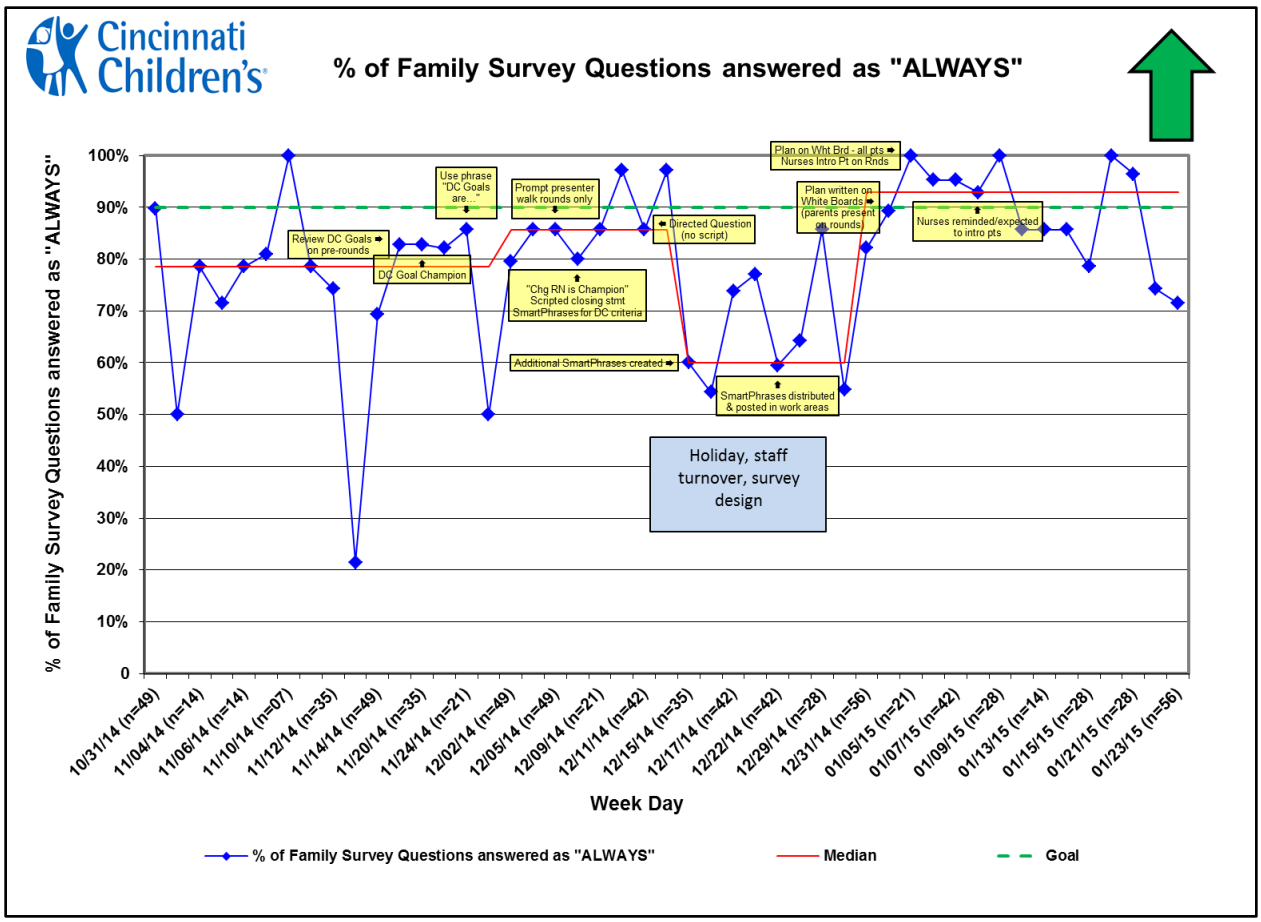


Chart 2

Each concept contributed to the change in the outcome measure. The magnitude of each concept's impact is also displayed. In addition, since the feedback measure is a composite of the 7 different questions, further analysis was conducted to see how each concept impacted the responses of each questions. The individual run charts for each of the feedback questions is available in Appendix D. Of particular interest is the shifts in the responses of questions 1, 2, 4, 5, and 7. All of these questions have a steep incline in positive responses around the beginning of January. It may have been influenced by the introduction of writing the plan for the day on the whiteboards, and engaging the bedside nursing staff more on rounds. In addition, question 6, which is about discharge goals, had an incline that started with the introduction of our first discharge goals concept and had sustained improvement throughout the duration of the project. The information that is gained from these insights is valuable when determining

what concepts are sustainable other areas of the hospital therefore improving the family satisfaction of rounds.

Discussion

In this project, the literature was reviewed, synthesized, and best practice elements of hospital rounding were determined. These best practices elements were then translated into practice through the application of the quality improvement methodology to determine the best fit for the elements into the current process. Feedback was collected prior to the start of the project from families and staff, and a standard set of feedback questions was created in order to serve as a guide for the success of the process changes. This feedback was collected directly from patient's families in the inpatient setting in real time and is a somewhat unique approach to quality improvement in the healthcare setting.

The participants in this project were primarily the hospital staff and physicians that provide care to the patients on a daily basis. Application of the best practice elements impacted their workflow and was challenging from a change management standpoint at times. The dedication to improving the patients' families' care-experience and clinical outcome is what drove the work forward in spite of these challenges. The result was a sustained improvement in patients' families' feedback on the rounding process and an acceptable level of alteration of the work processes of the physicians and staff.

Chapter Five

Summary

In summary, continuous learning and openness to abandon prior beliefs are what set the project up for success. Quickly redefining the problem and the focus of the project based on what was learned about the system being influenced were key in preventing a lot of wasted time and effort, and eventually landing on an outcome measure that was meaningful and relevant to the topic.

Limitations

There were some limitations of the project identified. Foremost, there were alternative rounding practices on weekends and holidays, and the project ran through a major holiday season. Due to the phrasing of the questions being "How often did…", the team recognizes that some families who had experienced rounds on a weekend or holiday would likely not select "Always" as an answer since the concepts would not have been in place during these experiences. Also, the criteria for inclusion in the study were just that the family had to be present on rounds that day. Therefore, there were many families that responded to the feedback questions multiple times and could have instinctively responded the same way every time. Lastly, there is always the concern over respondents in the hospital biasing their responses toward the positive because of fear of retribution by caregivers. This is why a diligent attempt was made at creating a non-threatening, anonymous environment for the respondent to submit their responses.

Implications for Nursing Practice and to the DNP Essentials

Through the implementation of the five concepts of verbalization of patient goals, targeted questioning, use of a standard template, incorporation of visual reference tools, and purposeful inclusion of bedside nursing into rounds, a sustained improvement in the family feedback of the rounding process was obtained. As previously noted, the adopted set of concepts will be added to the service rounding guidelines. The team will be working on a sustainability plan for the new processes in order to better hard wire them into practice. They will be publicizing the success in the institution through venues such as

nursing grand rounds, and looking to spread the successful concepts to other areas. The team also hopes to share the learnings from this project on a national level through professional conferences or publication to allow others to build on the concepts described here.

The improvement seen in the outcome of this project was driven by not only quality improvement methodology, but also by execution of the DNP essentials previously discussed. The project came together as product of early review of the literature and identification of best practices in relation to the clinical problem. These best practices were compared with the current rounding guidelines, and gaps in the rounding process were identified. Consistent mentorship and coaching throughout the duration of the project helped with obtaining buy-in with stakeholders of the process and solidifying new processes. Finally, continuous collection and analysis of the outcome data drove the improvement forward to reach a state that was effective and sustainable to the system.

In addition, the importance of involving patients and families in the process of developing an improvement project like this, as well as helping to develop process changes, cannot be overstated. It was apparent throughout the project that often what the staff saw as meeting the needs of the patients' families was not actually meeting their needs. The most notable example being that a process was started where "discharge goals are…" was stated with every patient every time. And while sustained improvement for this question was achieved, there was not consistent 100% "Always" in the feedback responses for the question "*How often did your child's GI care team review goals for discharge?*" This shows that there is a lot of opportunity in the misinterpretation of what some of these ideas mean between staff and families.

Tables and Appendices

Appendix A – Established Rounding Guidelines

Rounding Procedures on Inpatient GI Service Version 1.0

September 19, 2011

Guidelines for Consistency in Creating a High Reliability Unit

Prior to Rounds

Phone Call

Lumen service attending will receive a call from nursing prior to nursing participation in 'bed board', around 7:45 to review:

1. Any problems over night
2. Any challenges with bed availability
3. Admissions coming in for the day
4. Any issues with families or staff to be addressed
5. Watcher List – who is on it now, who needs to be added

Provide the nursing staff with either a cell phone number or pager number to accomplish this.

Pre-Rounding – 20-30 minutes

The start of the clinical day is 8:30 am on Monday Wednesday and Thursday

9:00am on Tuesdays (Grand Rounds), 8:45am on Fridays

Prior to family centered rounds at the patient's rooms, the team will meet in the A4 South conference room to discuss;

a. Ongoing safety concerns
b. Any psycho-social issues that are not necessarily intended to be discussed on rounds

Cont.

c. Information about the patient's condition or plans that the team may not have known – not intended to be a repeat of what will be presented in more detail at bedside but an update on conversations with consults or primary GI docs that may not have been previously shared

d. Overnight issues of significance

e. A 5-10 minute education segment on any designated topic of interest. Not meant to require slides or handouts, simply a discussion about a general GI/Pediatric topic or update on treatment options of any given GI disease process that may be timely. This can also be accomplished during rounds per attending preference.

f. Selecting a resident or NP designee for inputting orders on rounds while at patient's room, and then conducting order read-back at the completion of the presentation of the patient.

g. Assigning the days elective admit patients to resident or NP

h. Clarifying any questions about the patient's care plan

Rounding – Weekday:

A focused, succinct, problem- oriented presentation of each patient at their room including the plans for the day and in the future. It would also be appropriate to include discharge criteria/goals of current admission:

a. Rounds will be led by the GI fellow, with the attending supporting this role and offering added suggestions where appropriate

b. Participants on rounds include patients nurse, charge nurse, discharge planner, social worker, pharmacist, dietitian, residents, Nurse Practioners, GI Fellows, GI Lumen Attendings, and others as designated.

c. Whenever possible, rounds will begin with room 456 and proceed in descending order of rooms. Exception will include when one of the residents is completing their 24 hour call, their patients will be presented first so they can leave rounds when this is done, they need to be out by 10:00am. Lumen fellow can assign follow-up work on their patients as necessary to other team members. The coming off-call residents presentations on rounds also serves as their sign-out. In addition, at times of 'bed crunch', in discussion with charge nurse, discharges for the day may be the next priority.

Cont.

d. Nursing will present first and start with a sentence introducing the patient; i.e. This is a 14 year old with Crohns disease here for flare of disease, and also including comments on monitors, lines, tubes, safety concerns, parental concerns, extraneous or unclear patient orders and data from the past 24 hours on weights, intake, and output

e. Resident or NP following the patient may choose to add to patient summary, then will present the medical condition as outlined above, as well as the plans for the day and going forward

f. Medication reconciliation will be done on rounds on every new admit (admit since rounds the day before) and every discharge. Additionally, Med Rec will be done weekly: Thursday for rooms 445-456 and Friday for rooms 433-444.

g. At the completion of rounding on A4 South, the charge nurse or their designee will review the 'Day Talk' questions which include identifying patients to be 'watched' due to their medical status, and any safety issues or concerns

Rounding – Weekend:

Abbreviated form of above will occur as per attending discretion. Rounds will start at 7:30 am in order to get residents out as soon as possible and to try to complete rounding prior to Liver team on A4 South starting as residents may be "pulled" for this.

Ongoing Communication

a. Whenever the plan for the day changes significantly, the change will be communicated to the family. It is highly encouraged that when this is communicated, the primary nurse be present. This serves several purposes including:

a. Provides a witness for any future questions as to what was discussed or not with the family

b. Allows the nurse to know what she may need to change to incorporate the change in plans

c. Enables the primary nurse to answer questions the family may think of throughout the rest of the day about the change in plans which can potentially free up the resident or NP for other duties

Cont.

b. Performance Feedback

a. It is highly recommended that verbal feedback be given to NP's, residents, and fellows on a weekly basis by the Lumen attending. This will not only help insure that the team is working cohesively by being aware of expectations, but as well, will help focus the team on improvement opportunities prior to completion of the two week attending rotation

b. We will ask that the charge nurse give the Lumen attending feedback on a regular basis on the nursing perception of how the team is functioning, to enable improvement in any areas which may help better serve the families on A4 South. This will occur on a weekly basis, the first week of the two week on call, attendings will receive verbal feedback, the second week will be written feedback with a copy forwarded to both the attending given feedback and to Dr Cohen's office for utilization in year-end feedback process/evaluation. The questions to be addressed by the charge nurse will be:

1. Was there collaboration between RN's and MD's?

2. Was the environment as fostered by the attending felt to be safe for nurses to discuss their concerns?

3. Was the RN's input perceived as valuable to the team

4. Was the time frame to round reasonable?

5. Were lengthy conversations with families deferred until after rounds to facilitate timely completion of rounds?

6. Were care plans and discharge goals for each patient clear?

Appendix B – IRB Approval Letter

Institutional Review Board - Federalwide Assurance #00002988

Cincinnati Childrens Hospital Med Ctr

Date: 10/28/2014

From: CCHMC IRB

To: Principal Investigator: David Galloway
Gastroenterology

Re: Study ID: 2014-6124
Study Title: Family Centered Rounds of the GI Lumen Team

The Institutional Review Board (IRB) acknowledges receipt of the above referenced proposal. It was determined that this proposal does not meet the regulatory criteria for research involving human subjects (see below). Ongoing IRB oversight is not required.

Please note the following requirements:

Per 45 CFR 164.512 the IRB has granted a waiver from the requirement to obtain an authorization for the use and/or disclosure of protected health information (PHI) (dates of scans).

Statement regarding International conference on Harmonization and Good clinical Practices. The Institutional Review Board is duly constituted (fulfilling FDA requirements for diversity), has written procedures for initial and continuing review of clinical trials: prepares written minutes of convened meetings and retains records pertaining to the review and approval process; all in compliance with requirements defined in 21 CFR Parts 50, 56 and 312 Code of Federal Regulations. This institution is in compliance with the ICH GCP as adopted by FDA/DHHS.

Thank you for your cooperation during the review process.

---

45 CRF § 46.102(d): Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

45 CRF § 46.102(f): Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains:

1. data through intervention or interaction with the individual, or
2. identifiable private information.

Appendix C – Feedback Questions

1. How often did the GI care team explain things to you in a way that was easy for you and your child to understand? (Never, Sometimes, Usually, Always)

2. How often did the GI care team involve you as much as you wanted in discussions about your child's health care? (Never, Sometimes, Usually, Always)

3. How often did you feel your input on rounds was appreciated like you were a vital member of the GI care team for your child? (Never, Sometimes, Usually, Always)

4. How often did your child's GI care team review current issues for your child and daily goals? (Never, Sometimes, Usually, Always)

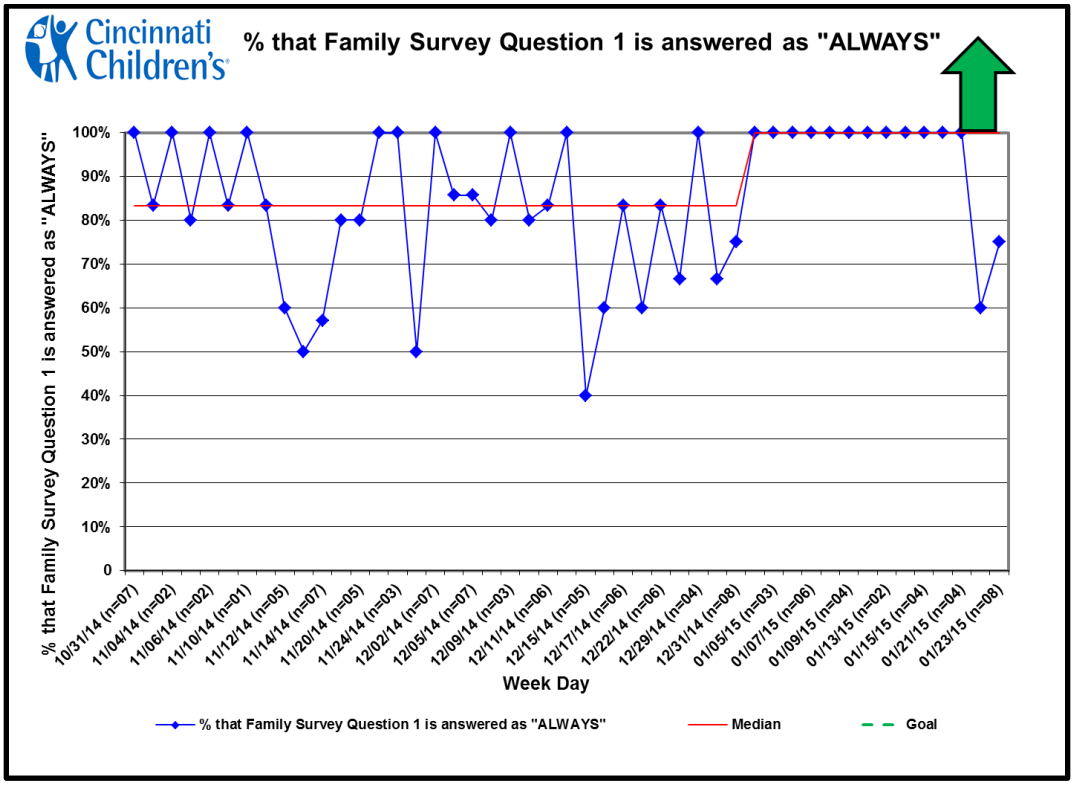
5. How often did you feel like the plans for the day were clear? (Never, Sometimes, Usually, Always)

6. How often did your child's GI care team review goals for discharge? (Never, Sometimes, Usually, Always)

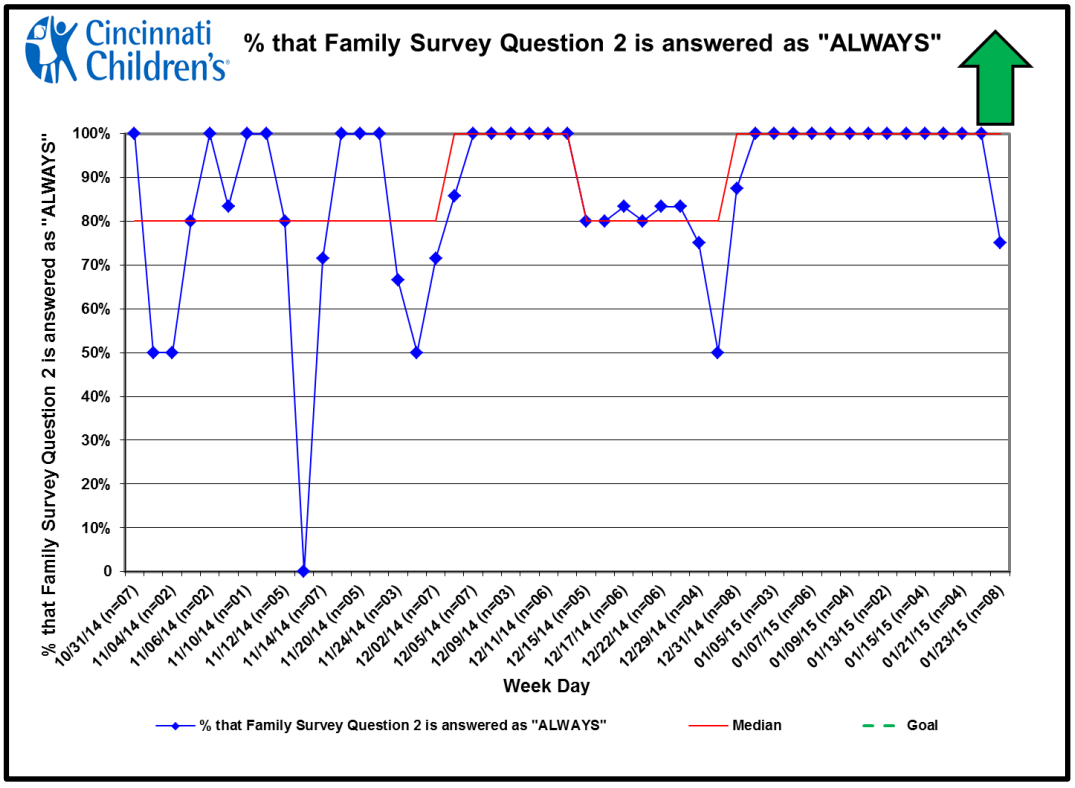
7. How often do you feel the GI care team communicated well with one another regarding your child's care? (Never, Sometimes, Usually, Always)

Appendix D – Run Charts by Question

1. How often did the GI care team explain things to you in a way that was easy for you and your child to understand?

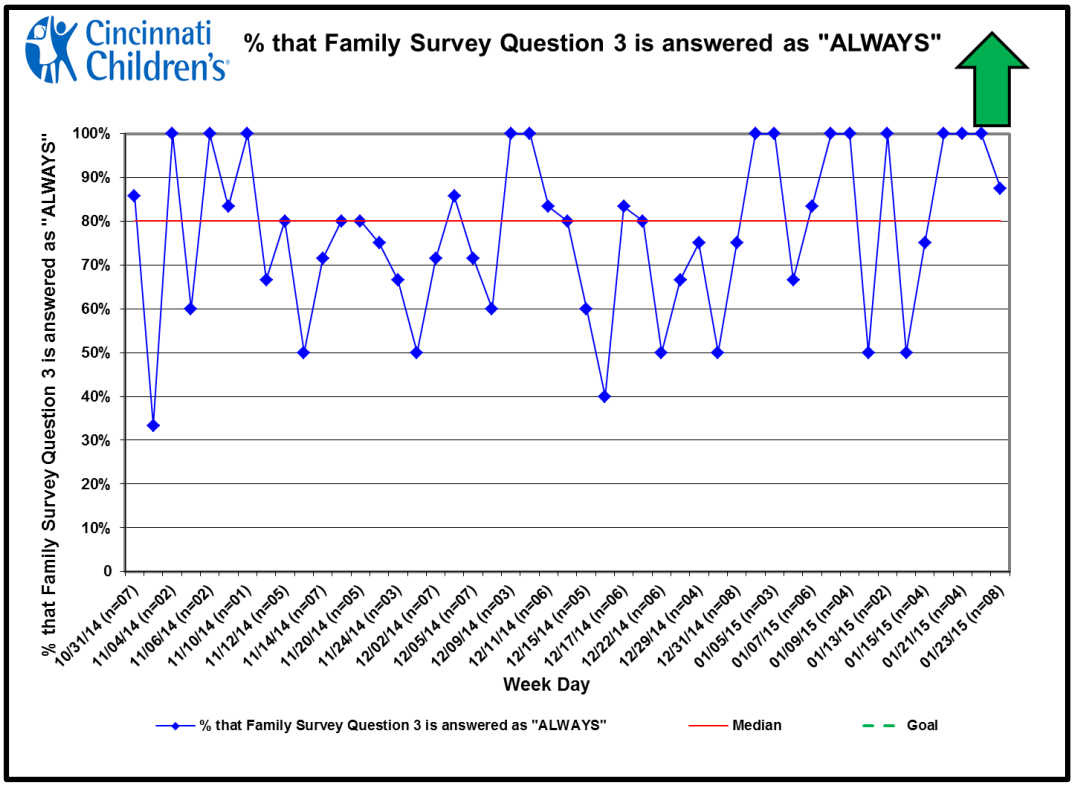


2. How often did the GI care team involve you as much as you wanted in discussions about your child's health care?

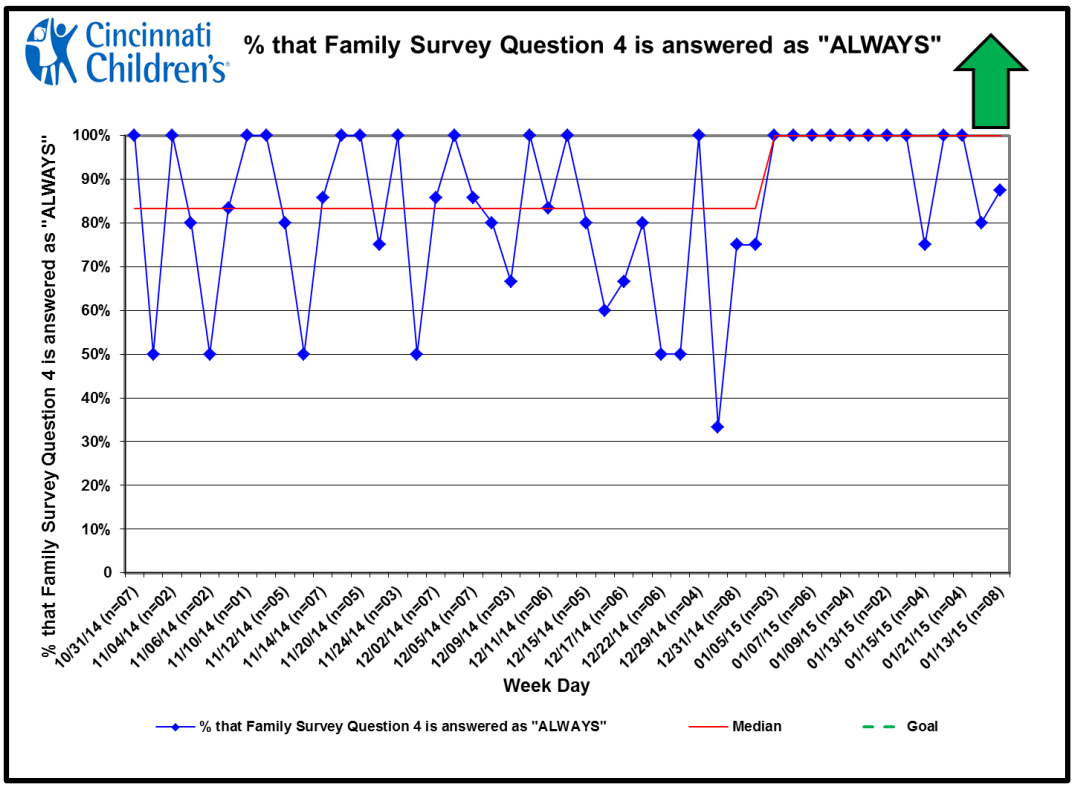


Cont.

3. How often did you feel your input on rounds was appreciated like you were a vital member of the GI care team for your child?

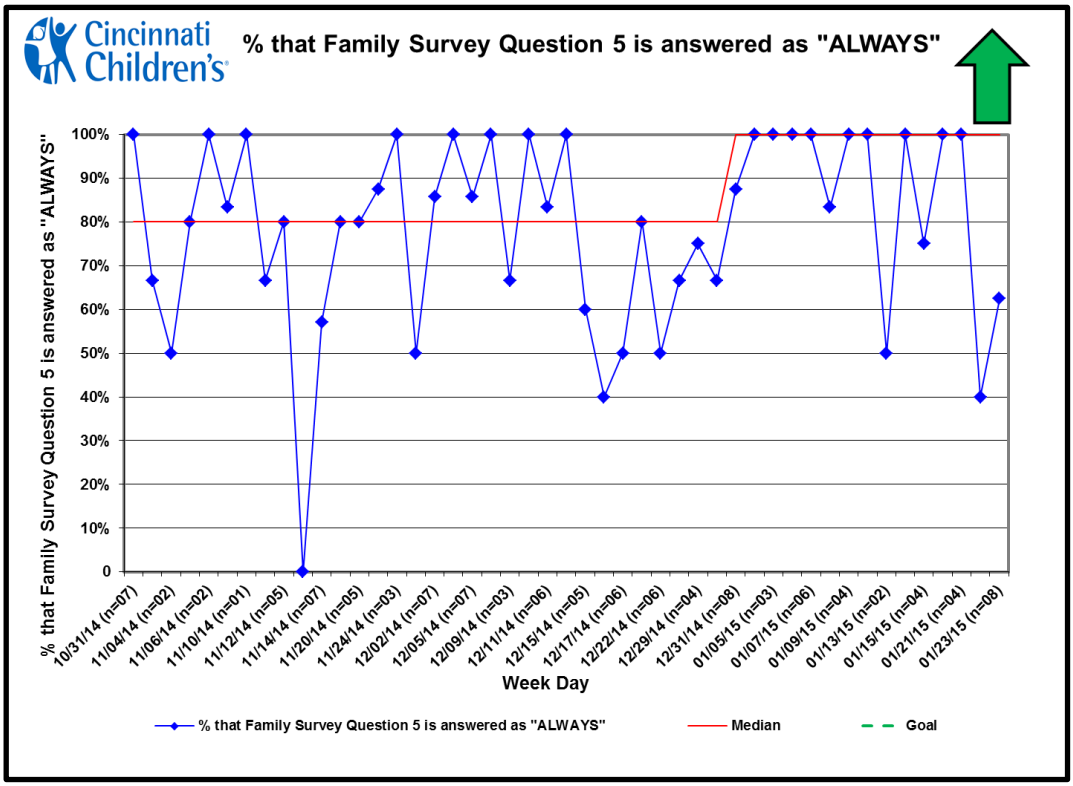


4. How often did your child's GI care team review current issues for your child and daily goals?

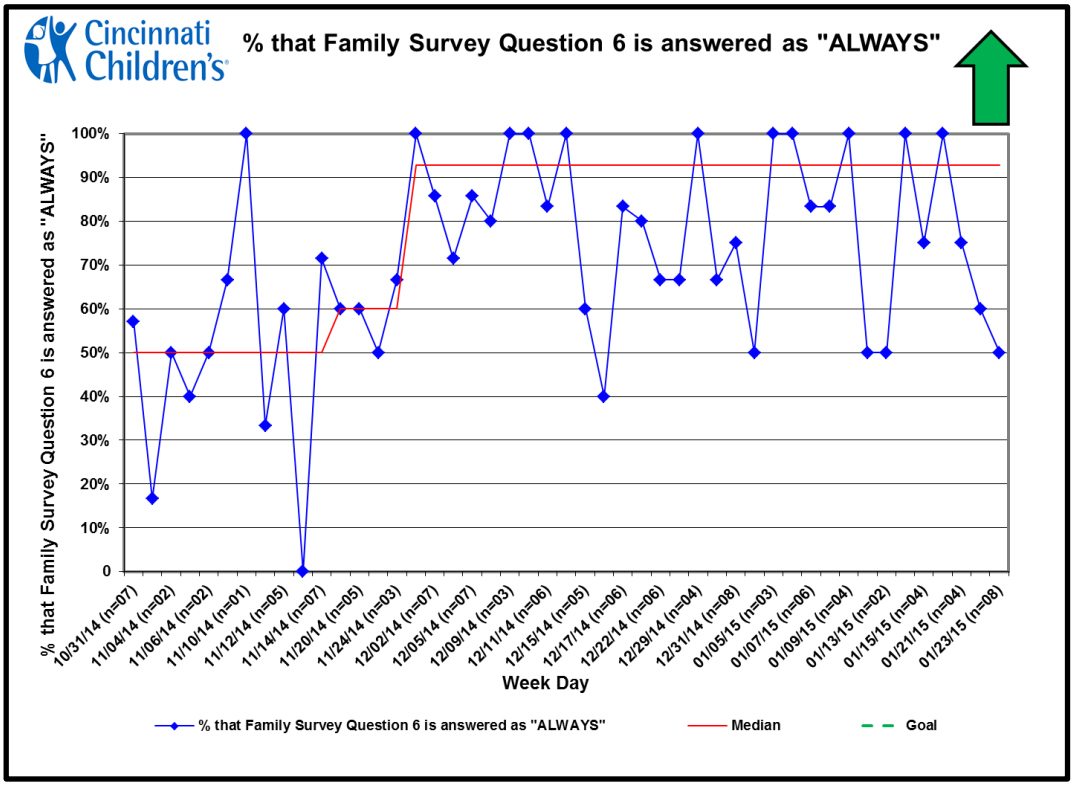


Cont.

5. How often did you feel like the plans for the day were clear?

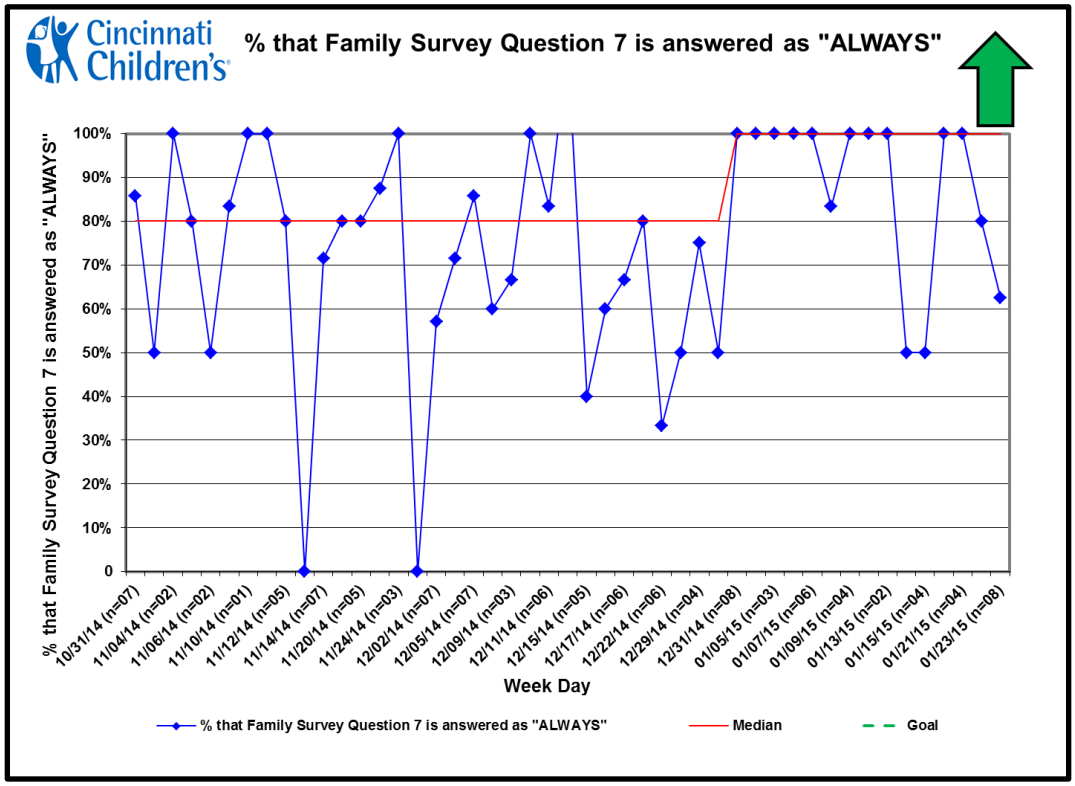


6. How often did your child's GI care team review goals for discharge?



Cont.

7. How often do you feel the GI care team communicated well with one another regarding your child's care?



References

Bhansali, P., Birch, S., Campbell, J. K., Agrawal, D., Hoffner, W., Manicone, P., . . . Ottolini, M. (2013). A time-motion study of inpatient rounds using a family-centered rounds model. *Hospital Pediatrics, 3*(1), 31-38.

Cameron, M. A., Schleien, C. L., & Morris, M. C. (2009). Parental presence on pediatric intensive care unit rounds. *The Journal of Pediatrics, 155*(4), 522-528. doi:10.1016/j.jpeds.2009.03.035 [doi]

Cardarelli, M., Vaidya, V., Conway, D., Jarin, J., & Xiao, Y. (2009). Dissecting multidisciplinary cardiac surgery rounds. *The Annals of Thoracic Surgery, 88*(3), 809-813. doi:10.1016/j.athoracsur.2009.05.007 [doi]

Cincinnati Children's Hospital Medical Center. (2015). About cincinnati Children's. Retrieved from http://www.cincinnatichildrens.org/about/default/

Cox, E. D., Schumacher, J. B., Young, H. N., Evans, M. D., Moreno, M. A., & Sigrest, T. D. (2011). Medical student outcomes after family-centered bedside rounds. *Academic Pediatrics, 11*(5), 403-408. doi:10.1016/j.acap.2011.01.001 [doi]

Cypress, B. S. (2012). Family presence on rounds: A systematic review of literature. *Dimensions of Critical Care Nursing : DCCN, 31*(1), 53-64. doi:10.1097/DCC.0b013e31824246dd [doi]

Institute of Medicine (US) Committee on Quality of Health Care in America. (2001). doi:NBK222274 [bookaccession]

Johnson, V., Mangram, A., Mitchell, C., Lorenzo, M., Howard, D., & Dunn, E. (2009). Is there a benefit to multidisciplinary rounds in an open trauma intensive care unit regarding ventilator-associated pneumonia? *The American Surgeon, 75*(12), 1171-1174.

Lane, D., Ferri, M., Lemaire, J., McLaughlin, K., & Stelfox, H. T. (2013). A systematic review of evidence-informed practices for patient care rounds in the ICU*. *Critical Care Medicine, 41*(8), 2015-2029. doi:10.1097/CCM.0b013e31828a435f [doi]

Langley, G., Nolan, K., Nolan, T., Norman, C., & Provost, L. (1996). *The improvement guide. A practical approach to enhancing organizational performance*. San Francisco, CA: Jossey-Bass.

Licata, J., Aneja, R. K., Kyper, C., Spencer, T., Tharp, M., Scott, M., . . . Pasek, T. A. (2013). A foundation for patient safety: Phase I implementation of interdisciplinary bedside rounds in the pediatric intensive care unit. *Critical Care Nurse, 33*(3), 89-91. doi:10.4037/ccn2013280 [doi]

Muething, S. E., Kotagal, U. R., Schoettker, P. J., Gonzalez del Rey, J., & DeWitt, T. G. (2007). Family-centered bedside rounds: A new approach to patient care and teaching. *Pediatrics, 119*(4), 829-832. doi:119/4/829 [pii]

O'Leary, K. J., Buck, R., Fligiel, H. M., Haviley, C., Slade, M. E., Landler, M. P., . . . Wayne, D. B. (2011). Structured interdisciplinary rounds in a medical teaching unit: Improving patient safety. *Archives of Internal Medicine, 171*(7), 678-684. doi:10.1001/archinternmed.2011.128 [doi]

Rappaport, D. I., Ketterer, T. A., Nilforoshan, V., & Sharif, I. (2012). Family-centered rounds: Views of families, nurses, trainees, and attending physicians. *Clinical Pediatrics, 51*(3), 260-266. doi:10.1177/0009922811421002 [doi]

Simmons, J. M., & Brinkman, W. B. (2009). What's new is old: Maximizing the benefits of parental presence at bedside rounds through 100 years of insights from the literature. *The Journal of Pediatrics, 155*(4), 466-468. doi:10.1016/j.jpeds.2009.06.061 [doi]

Sisterhen, L. L., Blaszak, R. T., Woods, M. B., & Smith, C. E. (2007). Defining family-centered rounds. *Teaching and Learning in Medicine, 19*(3), 319-322. doi:10.1080/10401330701366812 [doi]

The W. Edwards Deming Institute. (2014). **The system of profound knowledge**. Retrieved from https://www.deming.org/theman/theories/profoundknowledge